

REMARKS

In an Office Action dated October 30, 2003 (paper no. 2), the Examiner rejected claims 3 and 10 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and use the invention, in particular noting that the claimed equations are not discussed in the specification and the terms of the equations are not defined. Similarly, the Examiner rejected claims 3 and 10 under 35 U.S.C. §112, second paragraph, as being indefinite since the terms of the claimed equations are not defined.

The Examiner rejected claim 1 under U.S.C. §102(b) as being anticipated by Long et al. (U.S. patent no. 5,710,990, hereinafter referred to as "Long"), claim 7 under U.S.C. §102(e) as being anticipated by Antonio et al. (U.S. patent no. 6,603,745, hereinafter referred to as "Antonio"), and claim 8 under U.S.C. §102(b) as being anticipated by Luz (U.S. patent no. 5,764,104, hereinafter referred to as "Luz"). The Examiner rejected claims 2 and 4 under 35 U.S.C. §103(a) as being unpatentable over Long in view of Jasper (U.S. patent no. 4,710,934), claim 5 under 35 U.S.C. §103(a) as being unpatentable over Long in view of Love et al. (U.S. patent no. 5,422,909, hereinafter referred to as "Love"), claim 6 under 35 U.S.C. §103(a) as being unpatentable over Long in view of Gilhousen et al. (U.S. patent no. 5,103,459, hereinafter referred to as "Gilhousen"), claims 9 and 11 under 35 U.S.C. §103(a) as being unpatentable over Long in view of Jasper, claims 12, 14, and 15 under 35 U.S.C. §103(a) as being unpatentable over Luz in view of Love, claim 13 under 35 U.S.C. §103(a) as being unpatentable over Luz in view of Gilhousen, and claims 16 and 17 under 35 U.S.C. §103(a) as being unpatentable over Luz in view of White et al. (U.S. patent no. 5,459,432, hereinafter referred to as "White").

The Examiner further rejected claims 1, 7, and 8 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of U.S. patent no. 6,321,073, rejected claims 2, 4, 9, and 11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of U.S. patent no. 6,321,073 in view of Jasper, rejected claims 5, 12, 14, and 15 under the judicially created doctrine of obviousness-type double patenting as being unpatentable

over the claims of U.S. patent no. 6,321,073 in view of Love, rejected claims 6 and 13 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of U.S. patent no. 6,321,073 in view of Gilhousen, and rejected claims 16 and 17 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of U.S. patent no. 6,321,073 in view of White. The Examiner noted that the applicants could overcome the rejections of the claims based on the judicially created doctrine of obviousness-type double patenting by filing a Terminal Disclaimer. The rejections are traversed and reconsideration is hereby respectfully requested.

In accordance with the Examiner's suggestion, the applicants are filing a Terminal Disclaimer in order to overcome the rejection of the claims under the judicially created doctrine of obviousness-type double patenting, which Terminal Disclaimer is attached hereto. Accordingly, the applicants respectfully request that the Examiner withdraw the rejections of claims 1, 2, 4-9, and 11-17 under the judicially created doctrine of obviousness-type double patenting.

The Examiner rejected claims 3 and 10 under the first and second paragraphs of 35 U.S.C. §112, in particular noting that the claimed equations are not discussed in the specification and that the terms of the equations are not defined. Claims 3 and 10 each include the following equation:

$$H(z) = \frac{\sum_m b_m z^{-m}}{\sum_n a_n z^{-n}}.$$

This equation is merely a generalized representation of a transfer function corresponding to an Infinite Impulse Response (IIR) filter, which filter and representation are well known in the art. Such a generalized representation of an IIR filter may be found in most introductory textbooks for digital communications, is a well known representation of an IIR filter such as filter 206 of FIG. 2, and is a generalized representation of equation (1), on page 9, of the specification, when the equation is multiplied out. Therefore, the applicants contend that the equations of claims 3 and 10, and the terms therein, are

supported by the figures and the specification. Accordingly, the applicants respectfully request that the Examiner withdraw the rejections of claims 3 and 10 under the first and second paragraphs of 35 U.S.C. §112.

The Examiner rejected claim 1 under U.S.C. §102(b) as being anticipated by Long, claim 7 under U.S.C. §102(e) as being anticipated by Antonio, and claim 8 under U.S.C. §102(b) as being anticipated by Luz. Claims 1 and 7 has been amended to provide a digital lowpass filter that resides in a feedback component of an automatic gain control (AGC) loop. Support for this amendment may be found in FIG. 2 and pages 6 – 8 of the specification, which depict an automatic gain control loop comprising elements 110, 114, 118, and 202, wherein element 202 is a feedback component of the automatic gain control loop.

Long discloses an invention used to reduce transmit peak-to-average power by splitting the transmit data into two groups of channels. The peak-to-average for the sum of the two groups is compared to that of the sum of the two groups with 180° phase shift (for example, 'A+B' versus 'A-B'). The result with the lowest peak-to-average value is then transmitted. Nowhere does Long teach the filtering, power averaging, or lookup tables of claims 1 or 7. Luz merely teaches a Fourier Transform Matrix (FTM) amplifier. Nowhere does Luz teach an AGC loop, let alone considering adjacent band interference within an AGC loop, and accordingly nowhere does Luz teach any low pass filtering inside an AGC loop. Antonio merely teaches taking simple power measurements (such as the variance) to determine cell loading. While Antonio mentions power control loops, they are mentioned only in the most general sense and nowhere does Antonio detail the operation or components of a power control loop, let alone mention any filtering within a power control loop. Therefore, none of Long, Luz, or Antonio, individually or in combination, teach the digital lowpass filter of claims 1 or 7. Accordingly, the applicants respectfully request that claims 1 and 7 may now be passed to allowance.

Since claims 2-6 depend upon allowable claim 1, the applicants respectfully request that claims 2-6 may now be passed to allowance.

Claim 8 has been amended to provide a method of automatic gain control that includes amplifying, by an amplifier, a communications signal according to a selectable

gain to generate an amplified communications signal, digitizing the amplified communications signal to produce a feedback signal comprising a series of digital samples representative of the amplified communications signal, lowpass filtering the feedback signal to generate a lowpass filtered digital sample series, calculating an average power of the lowpass filtered digital sample series, and setting the selectable gain of the amplifier as a function of the average power. As described above, none of Long, Luz, or Antonio teach lowpass filtering a feedback signal of an automatic gain control loop. Therefore none of Long, Luz, or Antonio, individually or in combination, teach the limitations of claim 8 of lowpass filtering of the feedback signal to generate a lowpass filtered digital sample series and calculating an average power of the lowpass filtered digital sample series. Accordingly, the applicants respectfully request that claim 8 may now be passed to allowance.

Since claims 9-17 depend upon allowable claim 8, the applicants respectfully request that claims 9-17 may now be passed to allowance.

As the applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

Respectfully submitted,

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